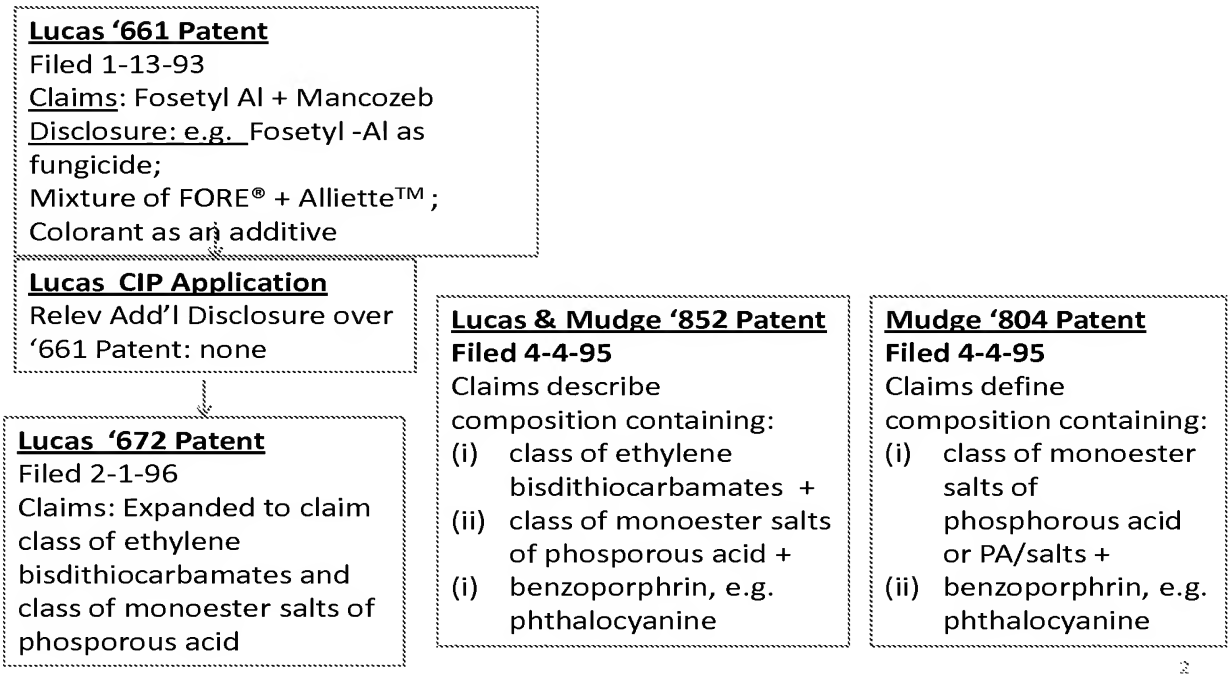
A. Background & Introduction

Applicant's counsel explained at the interview that an embodiment of the invention claimed in this reissue application has been marketed and sold by applicant under the name **SIGNATURE** since about 1996. This product has been sold particularly for use on turfgrass, such as on golf greens. Counsel stressed that the present application and the underlying Mudge '804 patent are important to applicant and that it has been very disappointing that the PTO has failed to examine this reissue application under expedited handling in advance of other applications, as required under the PTO's rules (37 CFR 1.176) and procedures(MPEP §§1442 and 708.01C). This application has been pending for almost five years during which there have been six separate office actions each containing non-final rejections. For example, the PTO sent the present February 25, 2009 office action some 6-months after applicant's last filed response. There was a gap of almost one year between applicant's response to the third non-final rejection and the PTO's fourth office action. The five years of pendency, which will occur next month, creates a further basis for "special" expedited status. See MPEP § 708.1(I).

Unlike patent applications, for which the term for a granted patent can be extended due to delays by the PTO, the term of a reissued patent cannot be extended beyond the expiration date of the underlying patent. Applicant respectfully requests the PTO to act within one-month of the submission of this response, and to contact the applicant's counsel to the extent any remaining issues can be resolved expeditiously.

B. Review of Prior Lucas Patents Cited in This and Prior Office Actions

The Lucas '661 patent is relied upon in one of the obviousness rejections of the February office action. A review of the relationship between that patent and others is illustrated in the following diagram:



The '661 patent has substantially the same disclosure as the '672 patent and both are prior art. The Lucas/Mudge '852 patent is not prior art but has previously been relied upon in an obviousness double patenting rejection, which was withdrawn in the office action of July 7, 2008.

C. The Invention of the Present Claims of This Reissue Application

The present claims do not merely describe a fungicidal compound combined with a colorant. As discussed during the

interview, each and every claim requires the phosphorous acid based component and phthalocyanine compound to be present in "synergistically fungicidally effective amounts" to achieve a fungicidal composition "enhancing turf quality." The PTO has repeatedly held that the prior art merely describing a phthalocyanine as a "colorant" or as a crystal inhibitor does not suggest or render obvious to a person of ordinary skill in the art the invention of the present claims. The Federal Circuit Court of Appeals in *Geneva Pharms., Inc. v. GlaxoSmithKline PLC,* 349 F.3d 1372 (Fed. Cir. 2003), held that: "By its terms, a "synergistically effective amount" is a functional limitation. As explained in *In re Swinehart*, 58 C.C.P.A. 1027, 439 F.2d 210, 213 (CCPA 1971), a functional limitation covers all embodiments performing the recited function."

As mentioned above, the claims refer to a "fungicidal" property and an "enhancing turf quality" property. Turfgrass stricken with fungus such as crown and root rot will experience reduced turf quality and the claimed composition would help the grass fight such disease and ultimately improve the turf quality. The method and composition are also described in the specification and claims to protect turfgrass against attack of crown and root rot and separately provide enhanced turf quality even when fungus disease is not present in the turfgrass:

> As a first aspect, the present invention provides a fungicidal composition for enhancing the quality of turfgrass and protecting against crown and root rot."

'804 patent, Col. 1, lines 39-41.

> The methods and compositions described herein are useful for improving turf quality and color in turfgrasses. In addition, the methods and compositions described herein are useful for treating crown and root rot in turfgrass.

'804 patent, col. 2, lines 56-60

The patent specification in Table 1 compares treatments #3 and #4 showing the composition in treatment #4 with pigment to have superior turf quality and turf color compared to treatment #3, even when there was no detectible fungus disease in any of the turfgrass treated (0% brown patch and 100% disease control). See Col 8, lines 30-35.

The description of the treatment of plants in the examples of the '804 patent specification explains that effectiveness is measured on the basis of ratings of three separate observations: (1) turf quality; (2) turf color; and (3) fungus disease control based on symptoms of brown patch. '804 patent, col. 8, lines 19-27.

During the interview Examiner Pryor raised the issue whether a declaration should be required to demonstrate "synergistic" properties for the claimed compositions because the claimed compositions do not contain a bisdithiocarbamate compound (e.g. mancozeb), which is present in examples in the patent specification. Applicant's counsel pointed out that such a declaration is unnecessary, that it would present a prejudicial delay and that it fails to give deference to prior decisions in the prosecution. Despite consideration of the '661 patent and other prior art since the filing of this application almost five years ago, no declaration showing has ever been required.

Applicant's counsel stressed that synergistic properties is an express limitation of the claims and therefore the claims cover a composition and method that provides a turf quality and fungus control that would be unexpected to a person of ordinary skill in the art from a mixture of the phthalocyanine dye colorant and fungicidal phosphorous acid component. Furthermore, the specification contains the inventor's conclusion that the composition of the phosphorous acid component and phthalocyanine (within benzoporphyrin compounds)

provides a "synergistic combination." '804 patent, col. 1, lines 41-62. This alone stands unrebutted. The inventor's reference to data in the table in conjunction with his description of his invention strengthens his conclusion. Of course, the specification is supported by the inventor's original oath in the original application for the '804 patent.

After this discussion at the interview, neither Mr. Pryor nor Mr. Celsa indicated that a declaration would be required.

D. Obviousness Rejection Based on the Lucas '661 Patent, the Rohm and Haas Bulletin for FORE® Fungicide and the Collins '228 Patent

This rejection presents old issues that have previously been considered and found by the PTO to be insufficient to support an obviousness rejection. Applicant points out that PTO procedure requires deference to be given to prior decisions in the examination of an application. MPEP § 704.01. Failure to give such deference, results in an unreasonable and prejudicial delay and a waste of PTO resources. Neither the newly cited Rohm and Haas Bulletin describing FORE® nor the Collins '228 patent provide teachings that create new issues of patentability.

Also, this rejection premises obviousness on the reasoning that a person of ordinary skill in the art would be motivated to remove only the mancozeb ingredient from the FORE™ /ALIETTE™ mixture described in the '661 patent specification, leaving a theoretical mixture of the fosetyl-Al and phthalocyanine pigment, which is different from the commercial product ALIETTE™. This reasoning is fundamentally flawed because:(i) it overlooks the critical mancozeb/fosetyl-Al synergism teachings of the '661 patent; (ii) it ignores the "lead" commercial product "ALIETTE™" which fails to contain such a pigment; and (iii) it erroneously relies on a disclosure attributed to be in the prior art '661 patent but which is not present in any prior art.

1. The Rohm and Haas Bulletin Describing FORE® Presents Nothing New to the Examination

As noted in the diagram on page 3, the '661 patent claims the combination of mancozeb and fosetyl-Al with no mention of a phthalocyanine. The examples of the '661 patent describe a mixture of the FORE® fungicide and ALIETTE™ fungicide. The February 2009 office action relies upon the newly cited Rohm and Haas bulletin to show that this mixture of commercial fungicides includes the phthalocyanine, Pigment Blue 15. However, this is not new information - - it is acknowledged in the Mudge patent specification and in the applicant's reissue declarations filed herein.

The Mudge patent specification acknowledges that FORE® contains Pigment Blue 15 (Column 7, lines 65-66) which was one of the phthalocyanine compounds named in the claims ('804 patent claim 15 and identified at Column 4, line 58).

The Declarations by the Assignee/Applicant filed in this application repeatedly acknowledged that the FORE® fungicide product in the ALIETTE™/FORE® mixtures in the Lucas '661 patent included a phthalocyanine dye:

> "The Lucas '661 patent describes in the Examples and Table 3 the treatment of crown and root rot with a mixture of the active fungicide ingredients of mancozeb plus fosetyl-Al, obtained by mixing together the commercial fungicides known under the names FORE™...and ALIETTE™...See, e.g. '661 patent at Column 4, lines 45-65 and Table 3. As stated in the '804 patent at Column 7, lines 65-66, the fungicide FORE™ contains both mancozeb and Pigment Blue 15, which is a phthalocyanine dye."

(Reissue Decls. filed 5/19/04 & 1/7/05 at p.4; Preliminary Remarks filed 5/19/04 at p. 4)

Therefore, the citation of the Rohm and Haas bulletin is cumulative and redundant to the FORE™ and ALIETTE™ mixture considered previously in this examination.

2. The Lucas '661 Patent Describes the Synergistic Criticality For the Presence of a Metallic Ethylene Bisdithiocabamate

The Lucas '661 patent (as well as the later '672 patent) claims compositions that must contain both a metallic ethylene bisdithiocabamate (e.g. mancozeb in the '661 patent) and a metallic fosetyl compound to produce a **synergistic** composition. The '661 patent teaches the critical presence of metallic ethylene bisdithiocabamate. The '661 patent illustrates a composition having that combination of these ingredients in the examples describing the mixture of commercial fungicides FORE® and ALIETTE™. While the '661 patent teaches that the FORE® and ALIETTE™ products were each known and commercially used separately, the specification teaches the criticality and synergistic benefits of using them in combination. Therefore, the only pertinent teachings in the Lucas '661 patent is to use FORE® and ALIETTE™ together for synergistic results or to use these commercial products separately,leaving ALIETTE™ with no phthalocyanine. The '661 patent does not mention the presence of phthalocyanine in FORE® or that phthalocyanine is a functional contributor in any way to the FORE®/ALIETTE™ mixture.

There is no suggestion in the '661 patent to modify two accepted commercial products, e.g. removing phthalocyanine from FORE® and adding that phthalocyanine to ALIETTE™. Despite the recognition that a "colorant" is one among many "additives" in fungicidal compositions, ('661 patent at col. 3, line 16) the '661 patent specification does not suggest any modification of these separate commercial products other than their combination.

The PTO has repeatedly found that the FORE®/ALIETTE™ mixture described in the prior art Lucas '661 patent does **not** render obvious the claims that require the novel combination of a phthalocyanine with a fosetyl-Al or other ester salt of phosphorous acid and which **excludes** mancozeb and other ethylene

bisdithiocarbamate salts. Most recently, the PTO reached this conclusion in the Office Action of July 7, 2008 when it withdrew the January 10, 2008 Obviousness Double Patenting Rejection based on the Lucas/Mudge '852 patent, which was filed the same day as the present Mudge '804 patent.

The obviousness rejection was based on the premise that "the inventions [claimed in the '852 patent compared with claims in this reissue application] differ from one another in that instant invention excludes mancozeb." The office action of July 7, 2008 withdrew this rejection, therefore concluding that it was **not** obvious to:

(i) exclude from the '852 patent claims bisdithiocarbamate metal salts and

(ii) at the same time expressly include a phthalocyanine in combination with a phosphorous acid derivative.

The '661 patent provides less information than the claims of the '852 patent, because the '852 patent claims specifically identify phthalocyanine as a required component of a composition. There is no basis to render a decision contrary to the PTO decision of July 7, 2008.

3. The Office Action Erroneously Relies on Information That is Not Prior Art to Create a Basis to Modify the '661 Patent

In the present office action the examiner erroneously relies on non-prior art to suggest a function for phythalocyanine other than as a colorant. The examiner in the office action confused the teachings in the non-prior art '852 patent with that described in the '661 patent. The Office Action at page 3, states:

> **"The Lucas ['661 patent] ALIETTE and FORE formulations comprising the above ingredients realized significant improvements in turf color as compared to other Mancozeb containing formulations lacking Pigment Blue 15. See Col. 5-6."**

The '661 patent fails to contain the above disclosure and the '661 patent describes only one source of mancozeb: FORE® from Rohm & Haas. See '661 patent at Col. 4 lines 60-61. It is the **non**-prior art '852 Lucas/Mudge patent and the present '804 patent specification that describes products which contain mancozeb without the phthalocyanine Pigment Blue 15. For example, in the '852 patent the product MANZATE™ from DuPont without any phthalocyanine is described. ('852 Patent, Col. 7, lines 4-7).

The '852 patent then describes an "improvement in turf quality and color" from application of ALIETTE™ +FORE® as compared with the combination of ALIETTE™ + MANZATE™. ('852 patent at Col. 7, lines 33-38.) THIS IS NOT PRIOR ART. This reliance in the rejection upon comparisons of mancozeb formulations with and without Pigment Blue 15 is non-statutory and requires withdrawal of this rejection.

4. The Collins '228 Patent Provides No New Basis For an Obviousness Rejection

The Collins '228 patent acknowledges the commercial product ALIETTE™ and its use for more than 10 years (as of the 1991 filing date of the Collins patent). It also acknowledges the use of phosphorous acid and its other salts as effective against plant fungal diseases. Col. 1 lines 21-30. The Collins '228 patent does not suggest modifying the ALIETTE™ commercial product. This is all consistent with and cumulative of the Lucas '661 patent. However, it is inconsistent with the reasoning of this rejection.

The Collins '228 patent describes an additional use for the known fungicidal phosphorous acid based compositions - - for controlling arthropod pests such as insects. The office action refers to the disclosure in Collins at Col. 12, ll.10-22 of "colorants" as one of many other possible additives to the "composition of the invention". That composition of the

invention is the composition for treating arthropods. However, this disclosure of "colorants" is less relevant than the suggestion in the Lucas '661 patent to include "colorants," since Lucas '661 relates to fungicidal compositions. See Lucas '661 patent at col. 3, l. 17.

As explained above, the claims expressly require the phthalocyanine component to be present in "synergistically fungicidally effective amounts" with respect to fungicidal and/or turf quality properties.

At pages 4-5 of the office action the examiner relies upon the Collins '228 patent to provide a basis for removing only the mancozeb (ethylene bisdithiocarbamate salt) component from the Lucas '661 patent while at the same time specifically requiring a phthalocyanine compound.

> "Accordingly, one of ordinary skill in the art …would have been motivated to modify the Lucas ['661] reference turf treating composition containing mancozeb to substitute the Collins reference phosphorous acid or alkali/alkaline earth metal salt since they both possess analogous anti-fungal activities with the added benefit of increase pesticide resistance…."

There is no basis in Collins to modify the Lucas '661 patent since Collins is dealing with control of arthropods not control of fungus or enhancement of turfgrass quality. Other deficiencies of Collins include: it does not mention mancozeb and does not suggest that phosphorous compounds and mancozeb "possess analogous antifungal activities"; and there is no motivation in Collins to add a second, separate phosphorous acid or salt component to any composition. One cannot find a suggestion in Collins that a phosphorous acid or salt derivative would function in the same way as a mancozeb. In fact, the entire disclosure of the '661 patent is that mancozeb is <u>not</u> an equivalent of the phosphorous acid component because synergism results when you mix mancozeb and a phosphorous acid derivative.

Also, there is no basis for the assumption in the office action that combining two different phosphorous acid derivatives will "increase pesticide resistance" over having only one present.

When assumptions, incorrect citations and cumulative references are stripped away, one returns to the fundamental issue reached previously by the PTO - - the present claims are not obvious to a person of ordinary skill in the art.

E. The Obviousness Rejection Based on Guillino, Fenn, Kato and Nagashima

1. Guillino et al. and Fenn et al. Relate to Fungi and Treating Plants to Control or Prevent Fungus; Whereas Kato et al. and Nagashima et al. Only Seek to Color Brown or Dead or Dormant Grass Areas

The February 2009 office action relies upon the **Gullino et al.** teachings that the "fungus Rhizotonia solani "is a cause of "brown patches in turfgrass." (Off. Act. at 6). The office action identifies **Fenn et al.** as the only reference relied upon in this rejection that refers to phosphorous acid or derivatives thereof as fungicides and that they "control Rhizotonia solani" (Off. Act. At 6). Also, the office action acknowledges that neither Gullino et al. nor Fenn et al. teach the use of a phthalocyanine compound…. (Off. Act. at 6)

In the February 2009 office action, **Kato et al.** is relied upon for its teaching that "green dye can be applied to brown dead lawn areas in golf courses (turfgrass) to restore the desired green appearance" (Off. Act at 6). Of course, the green dye cannot "restore" the natural green appearance of healthy turfgrass, but merely covers-up the brown areas. Also, the office action fails to mention that **Kato et al.** require that the green dye be a component of a "resin aqueous emulsion" where the resin functions to bind the colorant to the grass foliage for an extended time period so it does not wash off from the rain.

Nagashima et al. is described in the office action to "teach that a pigment blue 15 colorant can be added to dead grass to restore the color of grass" (Off. Act. at p. 6). Again, the office action fails to point out that **Nagashima et al.** only describe the colorant to be present with a "resin binder" or "copolymer emulsion" to affix the colorant to the grass, again for an extended time.

2. The Guillino/Fenn References are Not Properly Combined with Kato/Nagashima and the Kato/Nagashima References Teach Away From the Present Invention.

Kato and **Nagashima** require a resin binder to cause the colorant to adhere to the grass for an extended time period without washing off from rain. Since the grass being colored is dead or winter dormant grass, it is not growing and does not require periodic cutting. In contrast, fungicidal compositions of the present invention are intended to treat grass by preventing fungus attacks or fighting the fungus present and to improve turf quality. The presently claimed methods and compositions can be applied to live, growing grass in summer which is normally cut at least weekly, and during the heat of summer as often as every 3-4 days. If a **Kato/Nagashima** colorant/binder were applied to live, growing grass, the colorant/binder would be gone from the field in a week, not because of **wash-off**, but because of grass **cut-off**.

Gullino/Fenn are directed to fungicidal treatments to provide improved "turfgrass quality" by virtue of having healthier grass. **Kato/Nagashima** references describe coloring of dead or winter dormant grass with a binder/pigment mixture, not to control fungus or other disease that may be causing the brown color, and not to improve the health of grass, but to simply cover up the grass with green color. Kato/Nagashima references do not explain whether the colorant if adhesively bound to live,

growing grass would have a detrimental effect on the photosynthesis and other plant processes.

Kato/Nagashima actually teach away from the present claimed invention. These references teach that if you want to include a pigment such as phthalocyamine for the purpose of improving the color of grass you should apply it in combination with a resin binder and you should apply it to brown or dead grass that is not growing, rather than the claimed invention combining the phthalocyanine and specific phosphorous fungicide in "synergistically" effective amounts to live, growing grass to improve its quality.

Conclusion

As it is believed that all of the rejections set forth in the Official Action have been addressed and are without merit, favorable reconsideration and allowance are earnestly solicited.

If, however, for any reason the Examiner does not believe that such action can be taken at this time, it is respectfully requested that he telephone applicant's attorney at (908) 654-5000 in order to overcome any additional objections which he might have.

If there are any additional charges in connection with this requested amendment, the Examiner is authorized to charge Deposit Account No. 12-1095.

Dated: April 24, 2009

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